GIS
Idaho State Tax Commission

Projection Model

You may often receive data in a projection other than state plane.

Or, you may want to reproject your county data to match imagery layers.

Going through the reprojecting process with each dataset is time consuming and constantly selecting projection parameters may leave room for errors.

In this production we will create a model; this model will reproject data from IDTM to SP.

The end result will be an easy to use model, which will have all the projection tool parameters set to project a layer.

Once the model is created, by simply changing the input and output files you can quickly reproject any data from IDTM to SP.

Once in ArcMap open ArcToolbox.

We will create a new toolbox to house projection models in.

In the ArcToolbox TOC right-click on ArcToolbox and in the drop down choose New Toolbox.

A new toolbox will appear at the bottom.

Rename the toolbox to reflect its contents, for example IDTM to SP.

Right-click on the new Projection Toolbox, pick New and then Model.

A new Model will be added to the toolbox and the Model Window will appear.

Rename the Model to reflect its function of reprojecting from IDTM to SP.

The Model window is the interface you will use to create your processes.

In its simplest form a Process is a tool with its associated input and output files.

To populate your empty model window simply click and drag the necessary items to the window.

Use the Index tab at the bottom of ArcToolbox TOC find the Projection tool by typing in the tool name, selecting the appropriate tool from the list and then clicking on Locate.

The toolbox will expand to the Project tool location.

It is located under the data management toolbox, in the Projection and Transformation toolset and then

feature toolset.

Add it to the model window by left-clicking and dragging it into the model window.

In this example we'll take the output file from the already performed clip process and drag it to the model window.

In ModelBuilder there are easily identified shapes for each type of object in the window.

Blue Oval – Input Data
Yellow Square – Tool
Green Oval – Output Data

As you see in the model window the colors are missing from the tool and output objects.

Hollow objects indicate that the process is incomplete.

Setting the parameters of the tool will link the process and then the hollow objects will be filled.

To connect the input object to the projection tool click on the connect tool, this will change the cursor to the connect wand.

Use the connect wand to connect the Input Feature to the Projection tool.

Click on the cursor tool and then double-click the Projection Square to open the dialog window.

In this dialog you will set the projection parameters.

The Input Dataset should be filled in since we connected it with the wand.

Browse for the output location and rename the file RangeSP, something that designates it as State Plane projection.

In this case, the warning symbol tells us that the default file name already exists.

The Output Coordinate System will be selected from a known layer.

The green dot denotes a required field.

In the 4th row you will choose a Geographic Transformation if required.

As shown to the right, continue to browse to the NAD 1983 (Feet) folder.

Idaho State Plane has three zones, East, Central, and West.

Open ArcCatalog.

In the Table of Contents browse to the output file, highlight it, and then choose the Metadata tab.

After review the metadata you can see that the new file has been re-projected.

Close the Model.

To make the model easy to use for data other than the one identified in the blue oval we need to set parameters.

Parameters are the characteristics of a tool.

In this model think of them as the objects that will or can change; the input and output.

The purpose of this model is to easily re-project any data that is in IDTM to State plane.

By setting parameters we will create a dialog window to make selecting our input and output easy.

To identify an object as a parameter simply right-click on it and choose Model Parameters.

Do this for both the input and output ovals.

A large P should appear next to any object designated as a parameter.

Save the changes to the model and then close the Model dialog.

Now right-click on the model in ArcToolbox again but this time choose Open instead of Edit.

The model dialog that appears contains the two parameters that were designated.

The X identifies a problem that needs changed for the tool to work.

In this case the default file name already exists so we need to rename the file.

In the input file we can choose a layer from the dropdown the only difficulty is that to reproject using this model the layer must be added to the map.

Or, the model can be added to any other map project.

Watch the video Adding Saved Models to Map Projects.

Click Ok